

What is claimed is:

sub B1 >

1 A lithium secondary battery, comprising:  
 an internal electrode body including a positive electrode, a negative  
 electrode, and a separator, the positive electrode and the negative electrode  
 5 being wound or laminated via the separator so that the positive electrode  
 and the negative electrode are not brought into direct contact with each  
 other;  
 an organic electrolyte; and  
 at least a plurality of tabs ~~to be~~ connected to each of the positive and  
 10 negative electrodes for current collecting, the tabs having a total cross-  
 sectional area ~~of the tabs~~ be not less than a constant area in accordance  
 with the quality of the material to be used for the tabs so that the tabs ~~to be~~  
 connected to each of the positive and negative electrodes may not fuse when  
 at least 100 A current flows through the lithium secondary battery.

15 2. The lithium secondary battery according to claim 1, wherein the  
 relationship between material of tabs and total cross-sectional area of the  
 tabs is not less than 0.009 cm<sup>2</sup> for aluminum, not less than 0.005 cm<sup>2</sup> for  
 copper, and not less than 0.004 cm<sup>2</sup> for nickel, and preferably not less than  
 0.014 cm<sup>2</sup> for aluminum, not less than 0.008 cm<sup>2</sup> for copper, and not less  
 20 than 0.008 cm<sup>2</sup> for nickel.

3. The lithium secondary battery according to claim 1, wherein a thickness of a tab is not more than twice a thickness of an electrode active material layer in an electrode to which the tabs are welded, and preferably not more than a thickness of the electrode active material layer.

5 4. The lithium secondary battery according to claim 2, wherein a thickness of a tab is not more than twice a thickness of an electrode active material layer in an electrode to which the tabs are welded, and preferably not more than a thickness of the electrode active material layer.

10 5. The lithium secondary battery according to claim 1, wherein a sum of resistance value of the tabs per a unit battery is not more than 1 mΩ.

6. The lithium secondary battery according to claim 2, wherein a sum of resistance value of the tabs per a unit battery is not more than 1 mΩ.

15 7. A lithium secondary battery, comprising:  
 an internal electrode body including a positive electrode, a negative electrode, and a separator, the positive electrode and the negative electrode being wound or laminated via a separator so that the positive electrode and the negative electrode are not brought into direct contact with each other;  
 an organic electrolyte; and  
 at least a plurality of tabs ~~to be~~ connected to each of the positive and  
 20 negative electrodes for current collecting,

sub B2 >

wherein the tabs function as current fuses.

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- 5 8. The lithium secondary battery according to claim 7, wherein the relationship between material of the tabs and total cross-sectional area of the tabs when internal resistance of a unit battery is set  $R$  ( $m\Omega$ ) is not more than  $0.36/R$  ( $cm^2$ ) for aluminum, not more than  $0.18/R$  ( $cm^2$ ) for copper, and not more than  $0.14/R$  ( $cm^2$ ) for nickel, and preferably not more than  $0.18/R$  ( $cm^2$ ) for aluminum, not more than  $0.09/R$  ( $cm^2$ ) for copper, and not more than  $0.07/R$  ( $cm^2$ ) for nickel.
- 10 9. The lithium secondary battery according to claim 8, wherein the tabs are provided with a narrow portion.
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10. The lithium secondary battery according to claim 1, wherein internal resistance is not more than  $10 m\Omega$  per a unit battery.
11. The lithium secondary battery according to claim 7, wherein internal resistance is not more than  $10 m\Omega$  per a unit battery.
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12. The lithium secondary battery according to claim 1, wherein when internal resistance of a unit battery is set  $R$  ( $m\Omega$ ), the relationship between material of the tabs and total cross-sectional area of the tabs is not less than  $0.008 cm^2$  and not more than  $0.36/R cm^2$  for aluminum, not less than  $0.005 cm^2$  and not more than  $0.18/R cm^2$  for copper, and not less than  $0.004 cm^2$

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15. The lithium secondary battery according to claim 7, wherein deviation of respective resistance values of the tabs remains within  $\pm 20\%$  of an average value.

16. The lithium secondary battery according to claim 1, wherein an end part of the tab at the side with no connection taking place with the electrodes is connected by pressure attachment, welding or eyelet.
17. The lithium secondary battery according to claim 7, wherein an end part of the tab at the side with no connection taking place with the electrodes is connected by pressure attachment, welding or eyelet.
18. The lithium secondary battery according to claim 1, wherein battery capacity is not less than 5 Ah.
19. The lithium secondary battery according to claim 7, wherein battery capacity is not less than 5 Ah.
20. The lithium secondary battery according to claim 1, wherein the battery is used for an electric vehicle or a hybrid electric vehicle.
21. The lithium secondary battery according to claim 7, wherein the battery is used for an electric vehicle or a hybrid electric vehicle.